**Extended essay topics**

The ancient history of pi.

Two dimensional circles relative to three dimensional motion.

A statistical analysis for a small business.

Game theory: Its relationship with moral philosophy.

Chaotic Behaviour in deterministic dynamical systems.

A through survey on divisibility criteria.

Unusual methods in finding integrals.

Solving inequality problems using the theory of masses.

Self-similarity of the Mandelbrot set.

Differences of differences: games with the integers from 1 to n.

Geometric probability: the swimmer problem.

Cantor’s development of the transfinite numbers.

Linearization of the Schwarzian Equation (Complex dif.equations).

Tessallation: beauty and structure.

Gödel’s and Löb’s systems.

The mathematics of creation of secret and data transmission codes.

Development of digital signature algorithm through El Gamal’s authentication scheme.

Error in Taylor’s approximation.

The application of differential equations in describing the motion of a mass on a spring.

The mathematical lineage of general relativity.

Chaos: an orderly disorder.

Rieman’s geometry used by Einstein in his general theory.

Mathematical modeling of anti-aircraft fire in WW II.

The golden section in the plane and Fibonacci numbers.